



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Structural Cell Biology, Astbury Centre for Structural Molecular Biology, Faculty of Biological Sciences



Salary: Grade 7 (£32,548 – £38,833 p.a.)

Reference: FBSAS1021

Fixed-term for up to 5 years (due to funding)

Research Fellow in Structural Cell Biology, Astbury Centre for Structural Molecular Biology, School of Molecular and Cellular Biology

Are you looking to apply your skills in Imaging and Cell Biology to gain a new molecular understanding of how amyloid aggregates disrupt cells and to help develop new routes to combat amyloid diseases?

We are looking for an outstanding postdoctoral research fellow to join a Wellcome Trust-funded team that will investigate how proteins aggregate into amyloid fibrils and how aggregates kill cells. Ultimately the team will involve four post-doctoral researchers and will combine chemical biology, biochemistry, biophysics, structural biology, cell biology, and experiments in *C. elegans* to define the mechanisms underlying amyloid aggregates to form and the consequences for cells of aggregation. The successful applicant for this post will use imaging methods including cryo-electron tomography and super-resolution light microscopy, combined with cell biology experiments and use of *C. elegans* models of disease to define the mechanisms of amyloid aggregation in cells and *in vivo* and to elucidate the effects of treatment with newly discovered small molecules in a cellular context.

You will be based in the laboratories of Professor Sheena Radford and Professor Neil Ranson, and work closely with our collaborators Drs Eric Hewitt and Patricija van Oosten-Hawle, and other members of the amyloid team. You will have a PhD (or be close to completion) in Cell Biology, Biochemistry, Structural Biology or a related discipline. You will have extensive experience of using imaging methods and cell biology to elucidate biological mechanisms. Experience in cryo-electron microscopy/tomography would be a significant advantage, but training will be given to outstanding candidates lacking this experience.

Further information about the project and recent publications are available within the additional information document.

What does the role entail?

As a Research Fellow, your main duties will include:

- Use super-resolution light microscopy and cryo-ET to explore how amyloid formation disrupts cellular organisation and function;



- Generate human cell models of human amyloid disease to determine how amyloid aggregates cause cellular dysfunction;
- Understand the tissue tropism of different amyloid proteins using *C. elegans* models of disease (e.g. using super-resolution light microscopy and/or focused ion beam milling);
- Generate hypotheses for how cellular disruption proceeds and design experiments to test these ideas in human cells and in *C. elegans*;
- Assess the protective effects of putative anti-amyloid compounds in cells and in *C. elegans*;
- Integrate information from the above approaches to develop a new molecular and cellular understanding of amyloid-induced cytotoxicity;
- Keep up to date with recent advances in the fields of amyloid formation and its inhibition and in structural cell biology and imaging;
- Work closely with collaborators and other post-doctoral researchers employed on the project and other related projects;
- Communicate or presenting research results through publication or other recognised forms of output.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- A PhD (or be close to completion) in Cell Biology, Biochemistry, Structural Biology or a related discipline;
- Extensive experience in advanced microscopy. This could include cryo-electron microscopy/electron tomography and/or super-resolution light microscopy;
- Extensive experience in cell biology and the culture and analysis of primary mammalian cells or cell lines to address mechanistic questions in biology;
- The desire and drive to learn new skills and techniques;
- Imagination, creativity and ambition to drive new areas of science;
- Good data management, analytical and computer skills together with previous experience of using software for analysing data;



- The ability to design, execute and write up experimental work independently as well as a proven ability to work effectively and responsibly without close supervision;
- Experience of successful collaborations and team working.

You may also have:

- A BSc in Cell Biology, Structural Biology or a related subject;
- Experience of working in the fields of protein assembly, protein-protein interactions or protein aggregation and amyloidosis;
- Experience with correlative imaging methods;
- Experience of working with model organisms, possibly including *C.elegans*;
- Experience in computational analysis of complex 3D data.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

Your application should include:

- A supporting statement providing evidence to support each requirement listed on the 'What will you bring to the role' section of the Candidate Brief (no more than two sides of A4, minimum font size 11);
- An academic curriculum vitae, including a list of your publications.

Contact information

To explore the post further or for any queries you may have, please contact:

[Professor Sheena E Radford](#), **Astbury Professor of Biophysics**

Tel: +44 (0)113 343 3170

Email: s.e.radford@leeds.ac.uk

or

[Professor Neil A Ranson](#), **Professor of Structural Molecular Biology**

Tel: +44 (0)113 343 7065

Email: n.a.ranson@leeds.ac.uk



Additional information

Find out more about the [Astbury Centre for Structural Molecular Biology](#) in the [School of Molecular and Cellular Biology](#) in the [Faculty of Biological Sciences](#) and the [Radford Research Group](#).

Working at Leeds

Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our [Working at Leeds](#) information page.

A diverse workforce

The Faculty of Biological Sciences is proud to have been awarded the [Athena SWAN Bronze Award](#) from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. You can find more information on our [equality and inclusion](#) information page.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

